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LOUISIANA conservationist

JULY-AUGUST, 1976

...comments

Goodness comes out of people who bask in the sun, as it does out of a sweet apple roasted before the fire.
-Charles Dudley Warner

J. Burton Angelle, Director

July and August are often referred to as the "vacation months." That is because the majority of students, of all ages, are free of scholarly chores. For many families, the two months provide the only time during the year when the family can take a trip together. These are special months that beckon people. Brassy summer skies are softened at times by scudding white clouds and welcome gentle breezes in the shade of trees. There's an enticing summons to spend as much time as possible outdoors.

The people of Louisiana are fortunate in that there is much to be seen and done in the state during July and August. These are the months of the big tarpon rodeos and numerous other fishing tournaments. Either as participants or spectators at the display bins, vacationers will see a great variety of fish, from mighty blue marlin, graceful sailfish, hefty tuna, and brilliant dolphin to platinum-hued tarpon, speedy king mackerel and a host of other fine game and food fish.

Those who like freshwater fishing can find what they want in the state. There's Toledo Bend Reservoir with facilities strung out along its rambling shoreline that will accomodate those who arrive by car or camper. It is considered one of the country's foremost bass fishing areas, is fast attracting wide attention for its striped bass angling, and never an unkind word has been said about its bream and crappie fishing.

Many lakes in northwest Louisiana are popular for their scenery as well as the fine fishing they afford. A number of these lakes are studded with bright, delicately leafed cypress trees that seem like green velvet at a distance. Bayous and lakes in northeast Louisiana form a different backdrop for vacationing anglers and their families. They ramble through the remnants of the delta bottomland hardwoods, linking the lakes and providing top sport in freshwater angling.

In the southern parishes there are the slow, meandering bayous and streams that link lakes both large and small together, forming a lacework of waterways that are filled with bass, bream and crappie. Anglers move quietly along in the shade provided by Spanish moss hanging in great beards from live oak trees on the banks. The surface of the water is often dimpled by foraging fish. In the extreme southernmost parishes one can see the green and gold marshes of the state. Approximately 25 percent of America's wetlands are sprawled across the southern part of the state. Rich in many forms of wildlife and winter host to millions of ducks, coots and geese, the marshes are also the nursery grounds for a great portion of the shrimp caught annually in America. The coastal bays and lagoons are also bedding grounds for Louisiana's important oyster industry.

Camping out in the summer can be fun in Louisiana. The 595,000-acre Kisatchie National Forest offers many opportunities for wholesome outdoor recreation. There are campsites available. The same is true of the Louisiana State Parks. Many offer excellent camping sites and most are adjacent to lakes or other bodies of water. Many family groups are finding that while campers are splendid, they are not necessary for camping out. A tent and other basic equipment transported in an automobile will quickly initiate the beginners.

Scattered throughout the state are numerous camp grounds that are privately owned but available to vacationers for a relatively small fee. Many are located near places of historical interest. They are usually located in wooded areas and near water suited for swimming.

In their pursuit of outdoor recreation, many persons are taking to the waterways of Louisiana to explore remote areas by boat. Some take camping gear with them and spend several days in an area. Boating by day and then camping on a sand bar or the bank of a stream can be unusually satisfying when it comes to outdoor recreation.

The canoe has made an astonishing comeback in recent years. This has been evident by a sharp upsurge in canoe sales during the last three years, one that at this time gives no indication of tapering off. Numerous groups around the state have been formed for the sole purpose of bringing canoe fans together. They have been responsible for the growing interest in canoe trails in near-wilderness areas. These are trails that can be followed by boat and are clearly marked so there is no possibility of persons becoming lost or delayed in returning to the original starting point.

One doesn't have to participate in one of the many coastal fishing rodeos to enjoy excellent fishing at this time of the year. July and August are two of the most productive months in the year for all types of saltwater angling. Excellent catches of speckled trout, redfish and flounders may be had in all of the coastal bays and lakes, as well as in the many bayous and oil company canals that connect them.

Offshore fishing, around the countless oil and gas exploration and production platforms in the Gulf of Mexico along the Louisiana coast, is the finest that can be found anywhere. The platforms serve as artificial reefs and serve to attract and concentrate many species of saltwater fish. Favorites with Louisiana anglers are cobia, king mackerel, Spanish mackerel, bonito, red snapper and tripletail.

Waters in the Gulf of Mexico out of South Pass are excellent for big game fish such as blue marlin, white marlin, sailfish, dolphin, tuna, and wahoo. Louisiana is considered one of the 10 best spots in the world for big game fishing. It rates high on the international tournament trail.

Louisiana's citizens are lucky in that they do not have to leave the state at vacation time to have fun and good sport in the summer sun.

LOUISIANA conservationist

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EDWIN W. EDWARDS, Governor

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Front Cover: Louisiana Bobcat
Back Cover: Cattle Egret
Front and Back Cover Photography by Lloyd Poissenot

I give my pledge as an American to
save and faithfully to defend
from waste the natural
resources of my country—its soil
and minerals, its forest, waters
and wildlife.

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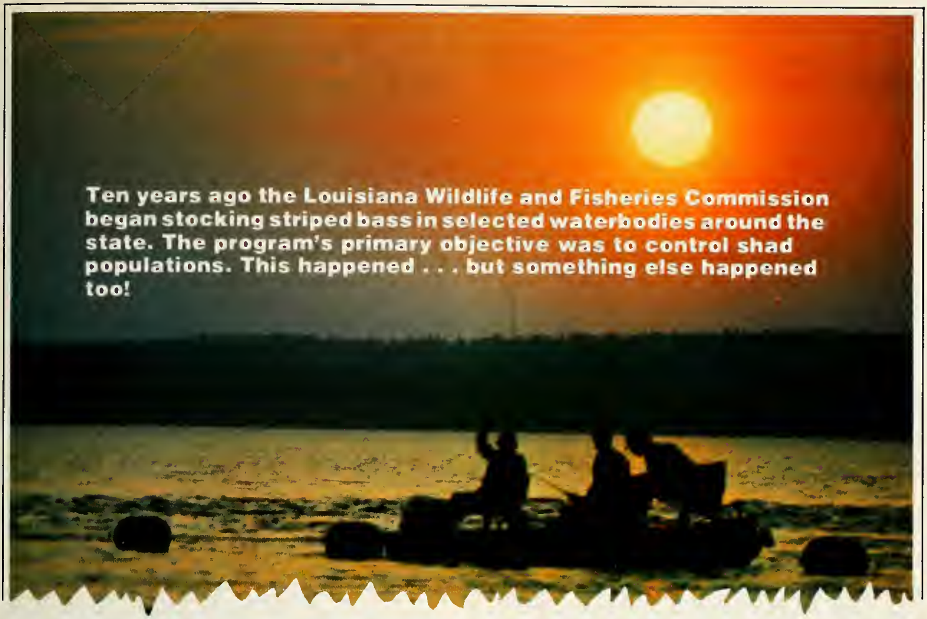
FRESHWATER TACKLEBUSTERS IN STRIPES!

By Frank Davis

Photography By Lloyd Poissenot



Ten years ago the Louisiana Wildlife and Fisheries Commission began stocking striped bass in selected waterbodies around the state. The program's primary objective was to control shad populations. This happened . . . but something else happened too!

ONCE UPON A TIME . . .

High atop the tower a siren sounded out its shrill warning, breaking a slumberous silence for miles along the Louisiana-Texas border. Fishermen, sitting idly by on the water, bobbing gently in their small boats, seemingly waiting for the inevitable to happen, appeared startled by the noise. Yet one by one, they began to grin, almost in sinister anticipation, as each focused intently on the massive steel and concrete structure.

Over 50 miles away in Beaumont, enough intricate electronic equipment to put a man on Jupiter had been activated. In just four minutes, by remote control, it would begin opening the dam on Toledo Bend Reservoir. It was the reason for the siren . . . and it was what the fishermen had been waiting for.

"This is it, Harry!" one plaid-shirted angler in a bass boat near the dam shouted to his fishing partner, standing up and looking around the rig for his medium-heavy spincasting outfit. "It won't be long now. Once those gates open and that water starts flowing through those turbines, it'll suck those fish this way from all over the lake. And you'll see some striped bass action beyond your wildest dreams! Get your gear ready, my friend!"

The angler was dead right. About an hour later, with a turbulent flow of crystal-green water funneling through the dam, large numbers of striped bass had begun to school near the surface of the churning liquid, and the dozen or so bass boats which had been moved flush against the dam's floating barrier line were in the midst of strike after strike and one bass after another!

The striped bass story in Louisiana didn't always have that flair of excitement, however. According to data accumulated over the years by the Louisiana Wildlife and Fisheries Commission, the state once had indigenous populations of stripers in the Tangipahoa, Tchefuncte, Amite, Tickfaw, and Pearl Rivers, and large schools of the fish in the Rigolets and Lake Pontchartrain.

But no one seemed to care. Then they disappeared. And no one seemed to care about that, either. Simply, the fish apparently came and went without a whole lot of hoopla on anyone's part.

Today, Louisiana waters would probably still be devoid of the fiercely battling fish had it not been for a program to stock them in certain waterbodies as a means of biological trash-fish control. And thus . . . the new story begins.

Arthur Williams and Janice Hughes, fisheries biologists for the Louisiana Wildlife and Fisheries Commission, appear to have been the key scientists behind the state's program. In 1965, after almost 10 years were spent in laboratory trial-and-error in other states trying to determine a method of producing striped bass by artificial insemination, the two biologists stocked Toledo Bend Reservoir, Sabine River, and Lake D'Arbonne with several million bass fry Louisiana brought in from South Carolina. The fish survived. So more fry were brought in from South Carolina, Texas, Maryland, and Virginia. And more lakes were stocked. But it wasn't until 1971 that Louisiana hit on the "production formula" and could begin breeding, producing, and stocking from its own brood fish.

Present-day statistics show that over 30 million striped bass have been released thus far in Toledo Bend, Sabine River, Lake D'Arbonne, Lake Bruin, Lake Claiborne, Indian Creek, Lake Bistineau, Pearl River, Tchefuncte River, Mermentau River, and Calcasieu River. And in addition to the anadromous stripers put into these waterbodies, Louisiana successfully came up with a "hybrid striper," a cross between a male white bass and a female striped bass. These were stocked exclusively in False River.

"The purpose of our restockings is not all that complicated to understand," Williams explains. "We figured that if we introduced a large freshwater predator, a vicious fish, to problem waters in Louisiana it would control the state's shad population explosions. So we began looking at potential species.

"First consideration was catfish. Flathead and blue catfish are large enough, and they are predators. But catfish are also cannibalistic, just as happy eating other catfish as shad. And under certain conditions, catfish will stunt. So we had to look for another fish.

"The only other large, vicious, predatory fish we felt we could work with successfully was the striped bass. It offered some promise. While we do know that stripers will eat other stripers at times, usually they resort to cannibalism only under extreme crowding conditions. When given a chance — and a choice — stripers prefer to feed on shad. What's more, they won't stunt. A striped bass will starve before he stunts. So we had a relatively good guarantee that any stripers surviving in our program would be big fish eventually. With research completed, we decided to use the striped bass as a biological management tool to control forage fish."

TWO FOR THE PRICE OF ONE

Way back when, somebody wrote an adage that goes, "The best laid plans of mice and men . . .", or something to that effect. This may not be an accurate analogy of what happened in the program, though. Perhaps a better one would be to relate to what New Orleanians call "lagniappe" — that little something extra. After several years of working with and studying the striper for scientific purpose and control, Louisiana biologists didn't have to have a brick wall crush them to realize that their "monitor fish" were doing a lot more than keeping the shad census down.

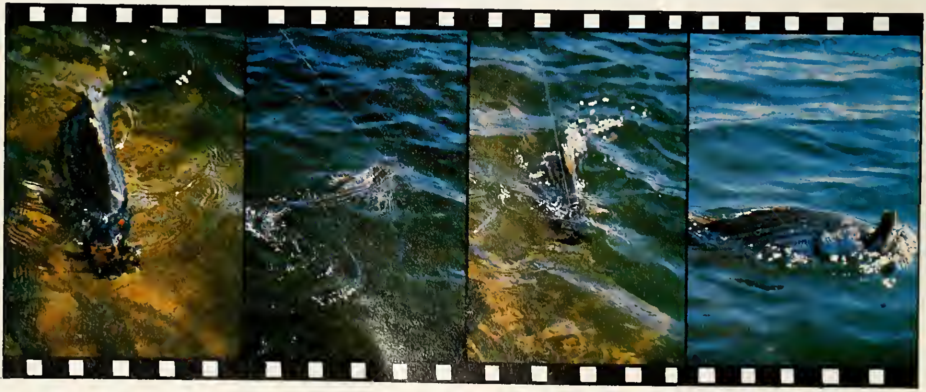
Stripers were becoming sought-after gamefish on the lakes in which they had been stocked. They — fishermen were finding out — were not only fun to catch they were tasty fried, baked, broiled, or barbecued. Calls began pouring into commission district offices reporting that stripers were taking both natural and artificial baits . . . and were breaking tackle doing it!

Williams says he still remembers vividly, and with some amusement, the incidents surrounding the striped bass' debute as a sportsfish.

"You know, Toledo Bend has always been an attraction for bass fishermen," he mused, sitting in a chair halfrocked back against the wall in his make-shift laboratory on the reservoir.

Biologically, striped bass have bony mouths. So anglers who fish them regularly usually take off standard hooks which come fitted on most popular striper lures and replace them with heavier steel.

Stripers are strong fish, real scrappers pound for pound. Anglers determined to catch them consistently should forget about light bass gear and use medium-heavy saltwater tackle.



"And, of course, bass fishing still makes top news here. But it was funny. Here were bass sports — and I mean *sports* — with their light rods, reel, and line, coming into this office shouting about large fish in the reservoir that were striking bass plugs, taking off into the green depths, ripping hell out of line, reels, rod tips, and leaders, and being just plain unstoppable!

"Every day I had to laugh at the purist bass man who seriously believed that if he played the striper right he could catch him on ultra-light rigs equipped with fourpound test monofilament.

"You've got to remember that Louisiana now has striped bass in the eight-year class, and a whole batch of them are in Toledo Bend. Some, I'd wager, come close to being 50 pounds! Real heavyweights! And they are powerfully strong fish. Ain't no way in the world to stop these brutes once they get a notion to run . . . you just can't put enough line on a small baitcasting reel! With a mind to, and on a power drive, a hefty striper could empty the whole spool on an Ambassadeur 5000! But some folks keep on trying, and the stripers keep on busting their gear all to smithereens."

In the past year alone, the reputation the striped bass has mustered on Toledo Bend Reservoir has attracted fishermen from Illinois, New York, New Jersey, Kansas, and other states. They come to "fish stripers," undaunted that the present creel limit on the species is two per day.

Even many dyed-in-the-wool Louisiana bass fanatics are divvying up their angling hours between largemouth bass and striped bass. They admit it's the thrill of pursuit, the challenge of holding a big striper on the line, the possibility that it might never get to the boat. Ol' Shad-Eater has become a prince of sportsfish in the Bayou State.

TO CATCH A BIG 'UN

Actually, fishing for the striped bass is not all that difficult once you know the characteristics of the fish and how to find him.

Williams says stripers are now being caught year 'round in every area they have been stocked (and in the Atchafalaya Basin), so there are some good fishing spots available. But for any degree of success, you must know a few things about the species before you can catch 'em consistently.

By instinctive behavior, striped bass prefer moving water. This is the reason they congregate in the turbulent water just before it roars through the gates of Toledo Bend Dam. This so-called "flow attraction" seemingly excites the fish, and biologists are convinced that unless the striper feels that flow attraction it probably won't reproduce naturally in Louisiana.

Biologically, striped bass a year and a half to two years old have virtually no predators other than the fisherman. Conditions being favorable, they will grow two to two and a half pounds per year. They are an open-water species that feed mostly on soft-bodied fish. They are spooky, so they do a lot of feeding at night. They are strong and put up a tremendous battle; but once they tire they surrender totally. And while their dietary preferences are for natural foods, they will take artificial lures that are bright and shiny, worms, eels, jigs, spinnerbaits, and spoons.

Most stripers now being caught in Louisiana average 15 to 20 pounds, but fully matured fish will range anywhere from 50 to 100 pounds.

There are several ways to locate striped bass. Oh, you could get lucky and find them schooling on the surface (which they do at times) . . . but most often you will have to join them in a little "hide

Striped bass will take a variety of artificial baits, including topwater plugs and bucktail jigs.

But they have a special fondness for certain lures, among them the Rapala, Water Gator, Redfin, Big-O, and Gay Blade.

and seek." The best way to do that is to troll until you get a strike. Fish in the open water away from the shoreline (the striper's territorial preference). Start off trolling deep, but if you get no action within 15 minutes begin varying the depth at five-foot intervals until you find the fish. You can also cast for stripers much the same as you would for largemouth bass. Regardless of which fishing method you use, however, *retrieve very, very slowly.* Slow retrieves produce fast strikes.

To generalize, striped bass will be caught either on the surface (especially at night) with topwater plugs, or down deep with deep-running lures. They are anything but "loners," so once you catch that first one chances are good you'll catch others.

Proven lures in Louisiana are the *Hotspot,* the *Bomber,* the *Gay Blade,* the *Bingo,* the bone-colored *Redfin,* the *Rogue,* the *Rapala,* the silver *Water Gator,* most black-and-yellow bucktails, and a specially-made plug called the *Striper-Swiper.*

In summer, the best time to fish is in the middle of the day. In spring and fall, fish early in the morning or late in the evening.

Depending upon where striped bass are feeding, they either "mouth" the lure (as a largemouth would), or they smash it so hard (especially on the surface) it catapults clean out of the water. Whichever happens, and because stripers have bony mouths, set the hook hard as soon as the fish picks it up.

You'll need heavy tackle if you want to land a striped bass. Your best bet is saltwater gear. Williams says he tells anglers that a stout baitcasting or spincasting rod and reel, loaded with nothing less than 75 pound test line, does a good job. But even with the sturdy tackle, it is important to keep the line tight, the drag adjusted, and the rod tip high. He also suggests that fishermen who use the popular striper lures now on the market replace whichever hooks come fitted on the lures with hooks of a larger size.

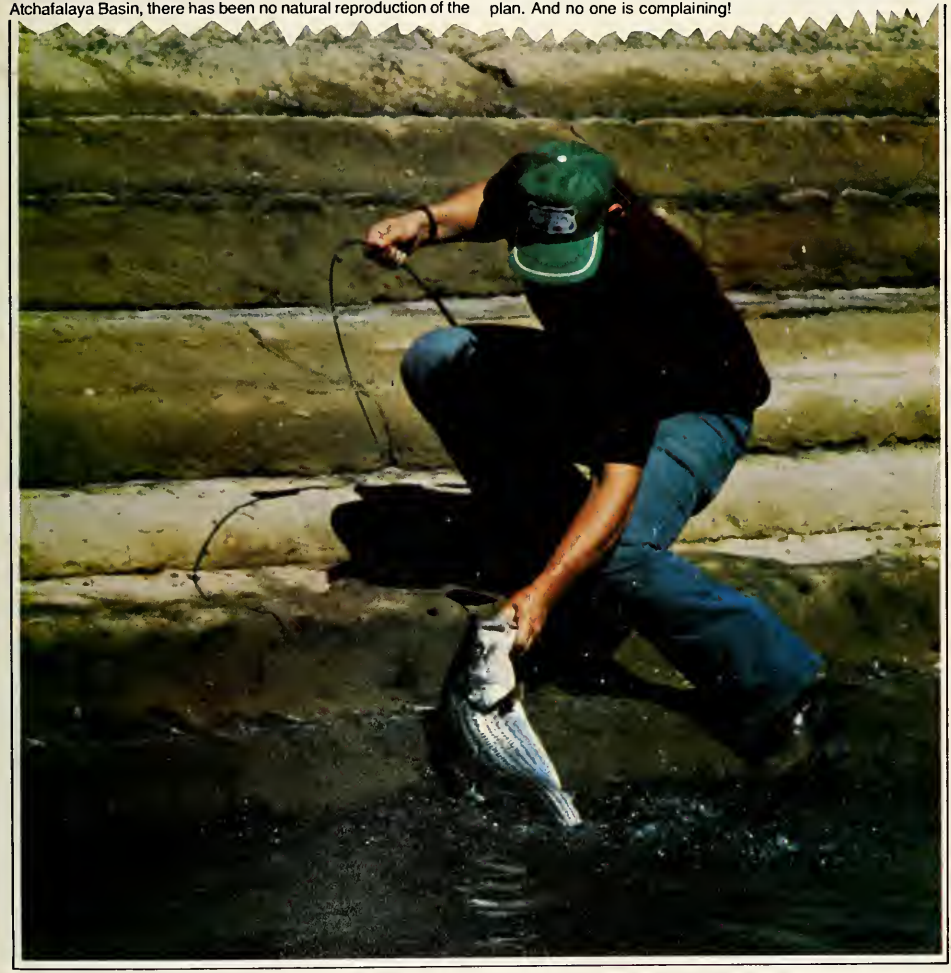
YOU'VE COME A LONG WAY, BABY

By the most stringent standards, Louisiana's program with striped bass has been both business and pleasure. The scientist and the fisherman both concur that they have gotten more out of the investment than they really expected. But somehow, each seems to realize there is more to come.

"What we have here is a program — and a fishery — in its infancy," Williams says in a tone of explanation, not wanting anyone deluded into a false sense of project completion. "You see, we want to give fishermen an opportunity to catch these big freshwater heavyweights, but at the same time we have got to make certain we insure ourselves a population of striped bass for brood stock. That's the only reason for the two-fish creel limit.

"As far as we know, possibly with the exception of the Atchafalaya Basin, there has been no natural reproduction of the striper in lakes we've stocked. We still don't know the stocking rate of fish per acre to assure reproduction. We think it's ten, but really we don't know for sure. So in order to continue our program of shad control, we have had to stock and will have to continue to stock striped bass every year. That means we'll need brood fish. But I think we're far enough along so that the program and sports-fishing can go on simultaneously."

Maybe someday soon, the state *will* discover that the bass it stocked *is* reproducing. Maybe someday soon, there won't be a need to refurbish continually the inland impoundments with fry and fingerlings. Maybe someday soon, one of the finest and most productive fisheries in Louisiana will center around striped bass. But meanwhile . . . today . . . everything is working according to plan. And no one is complaining!



CURRENT IMPROVEMENTS AT THE COMMISSION'S THREE FISH HATCHERIES, ALONG WITH EXPANSION PLANS IN THE NEXT FIVE YEARS, ARE TURNING THOSE HATCHERIES INTO FACTORIES FOR FISH. BREAM, BLACK BASS, AND STRIPED BASS ARE BEING PRODUCED WITH ALMOST ASSEMBLY LINE SPEED TO STOCK FARM PONDS, RESERVOIRS, AND CERTAIN LARGE LAKES. RESEARCH PROJECTS BEING PERFORMED AT THE HATCHERIES ARE PAYING OFF IN MORE FISH AND BETTER SPORT FOR LOUISIANA ANGLERS.

Factories For Fish

Louisiana has more fishermen, by far, than hunters. There are well over four hundred thousand licensed fishermen, along with twice that many cane pole fishermen who do not buy licenses under present laws. Despite this ever-increasing fishing pressure, angling in the Bayou State is excellent and even getting better with the passing of time. Fishermen often reach a point where they take good angling for granted. They shouldn't. Good fishing generally reflects the efforts of good fisheries biologists under a sound and modern fisheries program.

By McFadden Duffy

Photography By Lloyd Poissenot

When most people think of the commission's fish hatcheries at Lacombe west of Slidell, Beechwood just south of Alexandria, and the Monroe hatchery; they are inclined to think of stocking new ponds and lakes with fish. This is natural because game fish such as bass and bream cannot be bought or sold. It is up to the commission to see that new ponds are properly stocked.

It is true that fisheries biologists also give good advice to pond owners when fishing in those ponds deteriorates. This is usually because of improper or insufficient harvest of forage fish which eventually brings about an unbalance in fish populations.

These services performed by the commission have been available for years. But there is new activity at all three hatcheries. Substantial renovation work has been accomplished at one hatchery. Some of its larger, unmanageable ponds have been reduced in size. These and others at the two additional hatcheries have been reduced in size, making each of them one-acre in size, a more desirable size for producing fingerlings and later transferring the fingerlings to other bodies of water.

The hatchery at Lacombe has undergone some face-lifting in the past two years which has greatly improved its operations. Built back in the 1930's, it was badly in need of new drainage pipes, new pumps, better artesian wells and other improvements, particularly the reduction in size of fish rearing ponds.

Fisheries biologists place emphasis on the size of the ponds, finding one-acre ponds the most manageable, because experience has taught that while they are able to produce more fish in the larger ponds, mortality is high when drawdown occurs. When the water is withdrawn in order to remove fingerlings the resultant high temperatures cause high mortality among massed fish. It has been found with the one-acre ponds, water drawdown is more easily completed and the fingerlings collected without appreciable loss.

At Lacombe, there are now five one-acre ponds. While no records have been kept through the years, it can be assumed that the production of fish for stocking is greater than it was when two of the ponds were larger than the present one-acre ponds. There can be no increase in the size of the Lacombe hatchery because present facilities occupy all of the available land at the site.

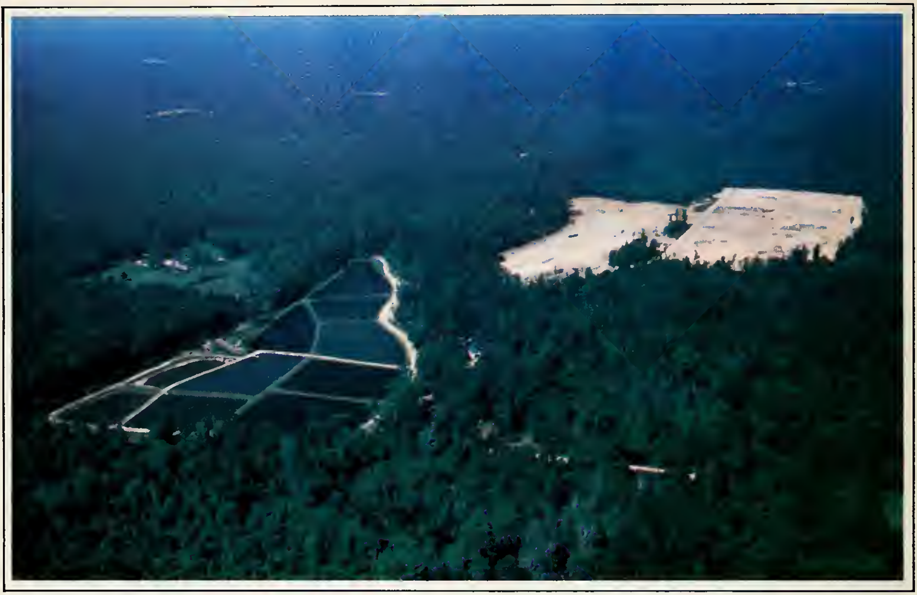
Beechwood is a different story. Prior to any renovation work there, this hatchery had approximately 18 acres of surface water. At the present time Beechwood is about five acres larger, with the additional ponds about equal to the total present at Lacombe. The new ponds are about an acre in size, a rearing area that has become standard in hatchery management in Louisiana. The larger ponds have been reduced in size to meet this manageable surface area of water. Originally one of the ponds was eight acres in size and there was great difficulty in removing the fish produced in the big pond without considerable mortality.

Each has its own drawdown facilities. It was necessary to renovate the large pond because the nature of the terrain at Beechwood made it impracticable to dig any other ponds without a large expenditure of funds for grading and similar work. The work at Beechwood is about 95 percent complete and will represent a total expenditure of approximately $200,000.

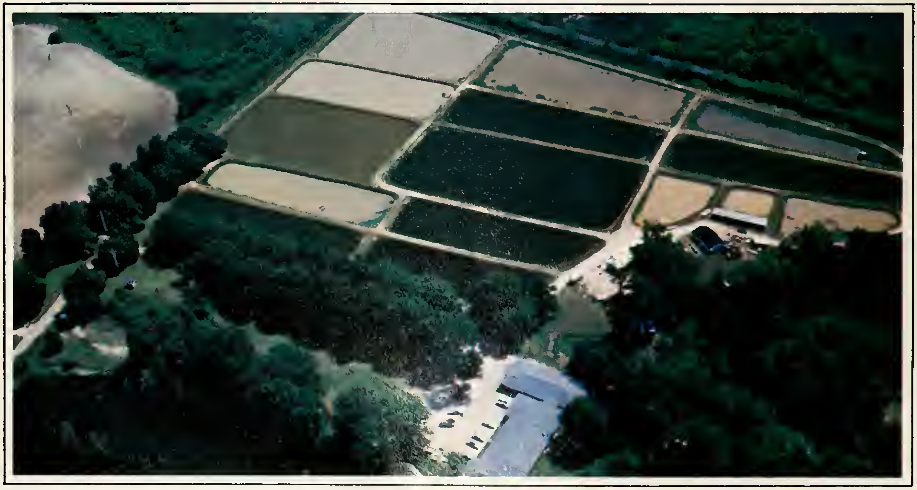
At the Monroe hatchery there are 15 ponds, however only 11 of them are good production ponds. One of them actually has to be pumped during drainage because of the location of the pond. This makes it difficult to get maximum production from this particular body of water. Obtaining water at the Monroe hatchery in itself is somewhat of a problem. They must use "wild water" from Black Bayou. Wells are unsuitable in this particular area due to high iron content of subsurface water.

At Monroe there are about 14 acres available for additional ponds. This land could not be turned into 14 surface areas of water because of the need for levees. Also, other control structures would be needed to allow fisheries biologists to drain the ponds and supervise the taking of fingerlings for restocking, or stocking,

A bull dozer creates a new pond that will be a factory for fish within a year's time.



Aerial view of Beechwood hatchery shows new ponds under construction. When complete, these rearing areas for fingerlings will be approximately an acre each in size and ideally suited for production of striped bass, black bass, and bream. They will have drawdown capability. There is room for expansion at the Monroe hatchery and approximately 12 additional one-acre ponds will be added as funds become available. Because of the high iron content in the hatchery area, well water cannot be used but bayou water is available. Fisheries biologists point out that if the commission is to accelerate production of striped bass and other fish, there will be definite need for enlarging the Monroe hatchery within five years.



as the case might be. However, it would be possible to expand the Monroe hatchery provided funds were available to do so. It would be possible to add approximately another 12 ponds.

Additional surrounding areas where more ponds could be constructed could be leased by the commission, but the water supply presents a problem. Well water would contain too much iron and this would be detrimental to the rearing of fingerlings. The hatchery must use bayou water.

In addition to the production of approximately two million bluegills and 400,000 black bass a year the hatcheries have other fish coming from the ponds in ever-increasing numbers. It might be mentioned that the channel catfish program was dropped in 1965. This was primarily due to the fact that commercial catfish farmers became quite numerous and it was felt wide spread catfish production was an infringement upon their rights. Those channel catfish produced were introduced in large public waters and not distributed to farm ponds.

The commission does intend to get into catfish production some time this year, concentrating primarily on the flathead catfish, or the Opelousas cat as it is often called (Spotted cat).

On Beechwood, the average production of fish (fingerlings) has been about 200,000 stripers, for a total of about six hundred thousand since the program of rearing stripers was begun at that hatchery.

While there are no definite plans for expansion of hatchery facilities in the immediate future, there will be a definite need for approximately 100 additional one-acre ponds in the next five years. Existing ponds and those now being completed at the hatcheries will have to carry the workload for the present.

Since 1965, Louisiana has been engaged in the rearing and stocking of striped bass in lakes and streams. The striped bass has long been known as a great game fish along the East Coast and to a lesser extent in the Gulf of Mexico. Typically, the striped bass is an anadromous species. This means it lives in salt water and reproduces in fresh water.

In South Carolina, however, a population of these fish has become land locked and has been living and reproducing in fresh water. Naturally, fisheries biologists around the country were excited about this and it opened the door to widespread experimentation with stripers. Biologists give two reasons for this popularity of the striper as a good fish to have around. First, the striped bass reaches a size of approximately fifty pounds in fresh water and consequently is a huge game fish. The second reason is that while attaining this large size it takes as food the larger forage fish which would otherwise go unused in the lake or stream. In other words, the striped bass offers the sportsman a good game fish that, because of its open water habits, does not compete with game species and also offers the fishery biologist a tool by which he can control the explosive shad populations in Louisiana.

During the years 1968 and 1969 Louisiana received some 3,165,000 striped bass fry from South Carolina. This number may seem large, but actually it is small when one takes into consideration that one adult female can produce as many as 1,200,000 eggs and, because of this high fecundity, a high rate of mortality can be expected. In order to be successful in these efforts, biologists must know as much about these fish as possible. A portion of this number is stocked in rearing ponds for stocking lakes and streams.A portion is retained for studies such as holding techniques, feeding experiments, and bioassay studies.

Fertilized striped bass eggs (above) are poured into a container by a fisheries biologist.

An aerial photograph (below) shows 14 new ponds in the process of being completed.

Below left, hatchery workers dump striped bass fry into a holding tank at one of the commission's hatcheries. They will be transferred later to a rearing pond until they reach fingerling size. A biologist checks on striped bass fry (upper right) and a hatchery worker demonstrates black bass fingerlings that have reached stocking size.

Fisheries workers use a seine to sample fingerlings that have been placed in a farm pond. The commission will stock private farm ponds if they fit the criteria necessary for good growth and reproduction.

For stocking purposes, 2,073,000 fry were placed in rearing ponds and 220,700 were recovered and stocked in Louisiana waters. This amounted to a survival rate of 10 percent. Approximately 149,779 fish were stocked in Lake D'Arbonne, and 36,750 were stocked in Toledo Bend, with 32,500 fish being returned to South Carolina, as initially agreed upon.

Beginning in 1965, striped bass fingerlings were stocked each year (with the exception of 1966) in Lake D'Arbonne and Toledo Bend Reservoir. During 1970 and 1971, 193,246 striped bass were stocked at D'Arbonne and 237,434 at Toledo Bend.

Striped bass stock was accelerated in the past four years. Those "factories for fish" were turning out hundreds of thousands of stripers. In 1972, 111,486 fish were placed in Toldeo Bend. An additional 2,644 went to Lake D'Arbonne with 13,500 going to Lake Bruin. In 1973, an additional 318,825 stripers were planted in Toledo Bend, with 7,232 going to Lake D'Arbonne.

In 1974, over a half million stripers went to Toledo Bend, 543,941 to be exact. That year also resulted in 6,110 striped bass going to D'Arbonne, and 11,705 placed in Lake Bruin. In 1975, 230,000 fingerlings went to Lake D'Arbonne, with 130,000 going into Claiborne Lake, 27,000 into Lake Bruin, and 438,000 in Lake Bistineau. In a single decade the commission came a long way. Total stocking for Toledo Bend is now at 1,294,102. Lake D'Arbonne has received 598,962, just under 600,000 stripers.

Another fish that is a product of the commission's hatcheries is the hybrid striper. It is a cross between the male white bass and the female striped bass. These have been stocked exclusively in False River and are fast-growing game fish that provide excellent sport on any type of tackle. These hybrids reach a weight of from 10 to 12 pounds, but reproduction rarely occurs. This means that the commision's hatcheries will have to continue production of hybrid fry and fingerlings to meet the demands of anglers who have been introduced to the keen sport provided by these non-reproducing fish.

There is every reason to believe that Toledo Bend and Lake D'Arbonne will be the principal areas for striper reproduction. These two bodies of water have the physical requirements for natural reproduction. Intensive sampling will continue until it is established that Louisiana stripers are capable of reproduction. Until this comes about, restocking will continue at intervals.

The striper program has been so successful and is so important to sport fisheries that stripers are being introduced into other areas of the state, with each passing year. It is hoped that before long, anglers won't have to drive far to find excellent striper fishing.

There is no noise in these fish factories. There is just the sound of water splashing from deep wells, water that is always dimpled by thousands upon thousands of baby fish. The hatcheries are an important part of the state's freshwater fisheries program, one that pays off in benefits for sportsmen of all ages.

Fingerlings are transported in tank trucks to release sites. Below, a fisheries worker releases striped bass into a body of water. The commission's three fish hatcheries produce millions of fish each year and plans call for increased production within the next five years.

Commission buys

A 6,490-acre tract of bottomland hardwoods known as Sunk Lake has been purchased by the Louisiana Wildlife and Fisheries Commission. The property, owned by 13 persons, cost $155 per acre for a total price of $1,005,590. Act of Sale took place May 19 in Governor Edwin Edwards' office.

Sunk Lake lies adjacent to both the Red River and Three Rivers Wildlife Management Areas. With the exception of a large lake and several small lakes, the land consists primarily of bottomland hardwood forest.

Game in abundance on the property include deer, swamp rabbit, squirrel, and waterfowl, and excellent habitat is also provided for non-game species such as beaver, nutria, otter, raccoon, opossum, bobcat, fox, mink, alligator, and many kinds of birds.

A large portion of the area annually goes through a spring overflow which greatly enhances both sport and commercial fishing. Bream, bass, and crappie fishing is excellent on the many connecting waterways. Buffalo, carp, freshwater drum, and blue, channel, and flathead catfish provide good commercial fishing. Purchase agreement, however, specified that an existing hunting and fishing lease remain valid until December 31, 1976. So not until that time will the tract be opened to the public.

Sunk Lake brings to 240,853 acres the total amount of land bought by the commission since its land acquisition program began in 1960. All of it is permanently dedicated to public recreational use.

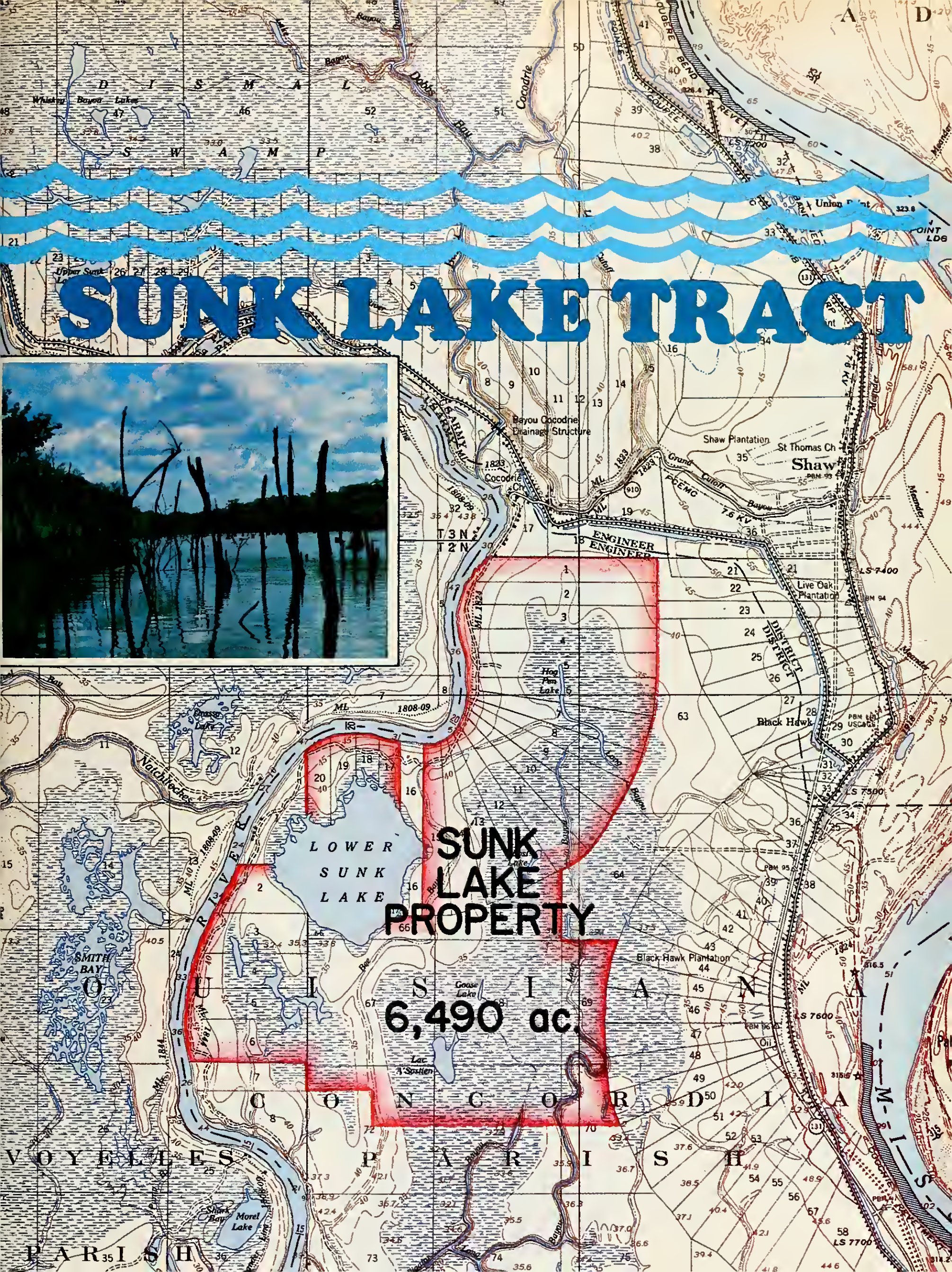
The commission's purchase of Sunk Lake will provide permanent protection on the tract against clearing of timber and channelization and drainage of bayous and lakes. In recent years, land clearing alone in northeast Louisiana has proceeded at a rate of 75,000 acres a year.

But in addition to preserving wildlife habitat, Sunk Lake also helps the commission solve Louisiana's evergrowing problem of providing land for public hunting, fishing, boating, birdwatching, and related outdoor sports.

With Governor Edwin Edwards at the Act of Sale for the Sunk Lake Tract are (from left): Doyle G. Berry, commission chairman; Charles G. Mayer, representative of the landowners; J. Burton Angelle, commission director; Harney Bogan, one of the landowners; J.C. "Sonny" Gilbert, former state representative from Concordia Parish who participated in early negotiations for the tract; and H. Clay Luttrell, commission vice-chairman.

Photography By Lloyd Poissenot

SUNK LAKE TRACT



How to:

Regardless of how much care you give your fishing tackle, sooner or later – if you use it regularly – it will begin to show signs of wear and tear. With fish scalers, de-hookers, artificial baits, and all the other paraphernalia fishermen collect, remedying wear and tear is simple enough . . . you toss out the old and replace it with new. But with rods, well you just don't do things that radically.

A good rod is important to an angler. It feels right in his hand. He grows accustomed to how it handles. It is sensitive enough to enable him to hook even the nibblers. And, maybe, it is even "sentimentally special." So, rarely does a fisherman callously and coldly "toss out" a slightly worn rod. But then . . . he doesn't have to, either.

As long as a rod is sound (with no cracks), it can be reworked into an object of envy. Custom rod-builders do it all the time. But having a rod reworked by a custom builder could be costly.

Actually, you can do it yourself with just a little bit of talent and a little bit of patience. Essentially, all you have to do is strip down the rod to the **blank** (bare rod without guides, eyes, or wrappings) and start putting it back together again. You can make an entirely new rod using a few simple techniques . . . or you can modify the techniques and repair any rod needing just a touch-up.

Here's how it's done — and we've included pictures to make it even easier:

Wrap and repair rods

By Frank Davis

Photography by Lloyd Poissenot

(Techniques Courtesy Hugh M. Burts)

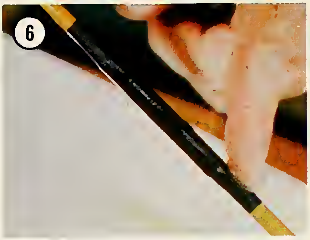
1. First, you need a place to work. It doesn't have to be elaborate, but it must be functional. It must be a place where you can set up a make-shift device to hold spools of thread, tubes of epoxy, tension guides for wrapping, and a few hooks to hold the blanks.

2. Broken rods can be repaired by using epoxy glue, wrapping thread, and a "sleeve." Most rods are hollow, so if ever you break a rod you think is beyond repair save sections of it. They make excellent sleeves for repairing other rods. Simply slip one end of the sleeve over one section of the rod (after it is glued), and then glue the second section and insert it into the other end of the sleeve.

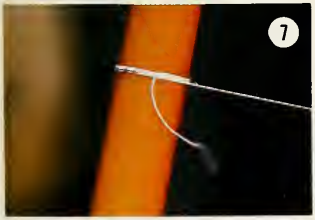
3. Hold both sections of the rod tightly in the sleeve until the glue starts to "set up." Align both rod sections so they dry straight, then set the repaired rod aside until the glue has hardened sufficiently to allow you to handle the rod without putting it out of alignment.

4. Begin wrapping the sleeve with rod thread. It is suggested you begin wrapping about a inch above the neck of the sleeve. And wrap it tight! Photo No. 7 illustrates the best method of starting a wrap.

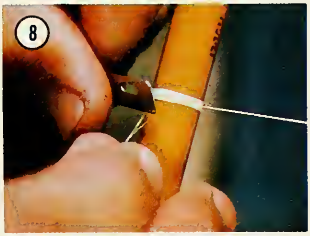
5. Be certain you use two wraps — one from each end. Most rod builders agree that wrapping both ends of the sleeve separately instead of using one continuous wrap provides added strength. Again, wrap them tight!



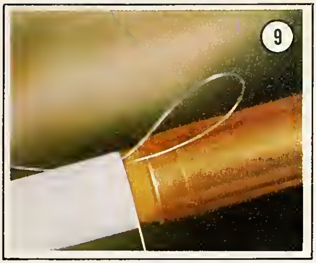
6. After all the wraps are completed and tied off, use the tip of your finger to coat the wraps with epoxy. Rod lacquer can be used for this, but epoxy seems to be more durable. After the repair has dried for several days, you may seal it with several coats of rod varnish. And then it's ready to use once more.



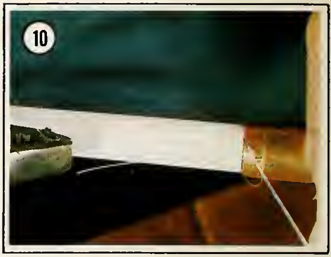
7. Wrapping properly is important. To begin a wrap lay the end of the thread (about two inches of it) in the "direction of the wrap," so that you will be wrapping over the end. Begin wrapping very tightly. Try to keep the loose end of the thread parallel to the rod blank.



B. After wrapping over the thread end for about an inch, interrupt wrapping and neatly cut the remaining "thread end," the piece sticking out from under the wraps. Then continue to wrap.

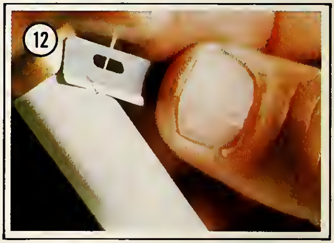


9. Just before you get to the end of the wrap, insert a piece of monofilament (coiled in a loop) under one wrap of the rod thread. The two ends of the monofilament should face the beginning of the wrappings, so that the looped end will be at the terminal wrap. Continue wrapping over the mono.

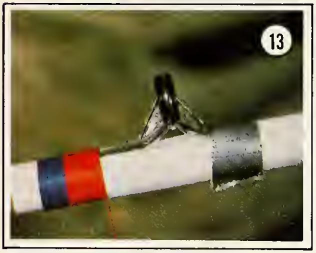


10. When it is time to make the last wrap, slip the end of the rod thread through the monofilament loop. With a pair of pliers, grasp the two ends of the monofilament and pull it snuggly tight so that the end of the thread tightens down on the wrappings.

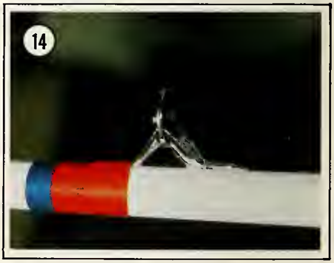
11. Then pull gently on both loose ends of monofilament with the pliers until the rod thread slides under the wrappings and the monofilament comes free, trailing the thread end with it. This procedure is what "ties" the entire wrappings. It will not come loose.



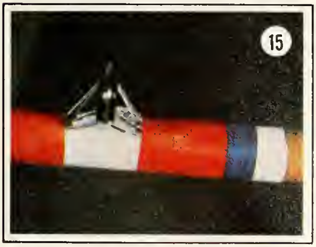
12. One word of caution. Pull gently on the monofilament when you're sliding the thread through the wrappings. If you pull too hard, the wrappings will "hump up" at the last wrap. When the process is completed, take a razor blade and neatly trim off the excess thread end.



13. To put on new rod guides (or to replace worn ones), first make a "base wrapping" by using the techniques just described. The base wrap gives the guides a better seating surface, but it also adds custom color to the reworked rod. Place the guide in position over the base wrap then tape one end of it to hold it in place. Wrap the other end.

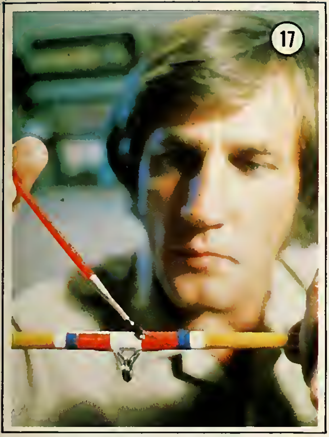


14. When the guide wrappings are completed on one side (you can use several layers of different colors to customize), remove the tape and wrap the other side of the guide.

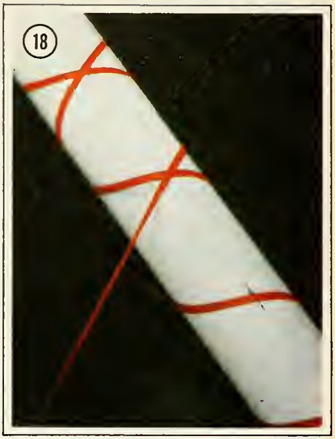


15. Wrap rod guides on tightly and wrap them as close to the "eye struts" as possible. A slight wrap over the base of the struts will eliminate slippage, which could put the guide out of alignment on the blank.

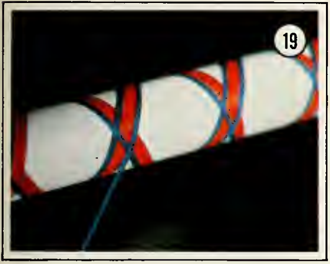
16. Putting on the first guide is arbitrary — it can go anyplace around the circumference of the blank. But once the first guide is wrapped, all other guides put on the rod must first be aligned. "Sighting" is the best way to line up rod guides.



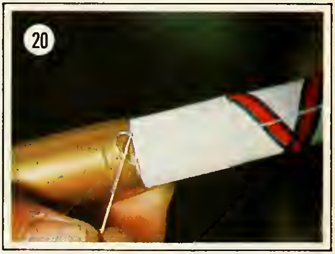
17. After all guides are wrapped on the blank, coat the wrappings with epoxy rod finish or three or four coats of rod varnish. It is recommended you wait 24 hours between coats to allow the finish to dry properly.



18. The base of the rod blank (where it goes into the rod handle) can be customized also by a series of wrappings. While design is solely up to the imagination of the designer, there are a few hints which might help speed the process along. For instance, after completing the base wrappings mark it with the pencil at the points where you want the secondary decorative wraps to go. It makes spacing easy.



19. Another hint for decorating a rod is to wrap several strands of thread (as many as five or six) at one time. Different colors may be used to alternate design within the "wrap strands." Wrappings may also be "stacked" one over the other to give depth effect.



20. "Cap" the decorative wrappings with a final wrap after the decorations are finished. Masking tape, used to hold decorative wraps in place during wrapping, can be removed after the first "cap tie" is made. Again, be sure to tie off both ends of the cap.

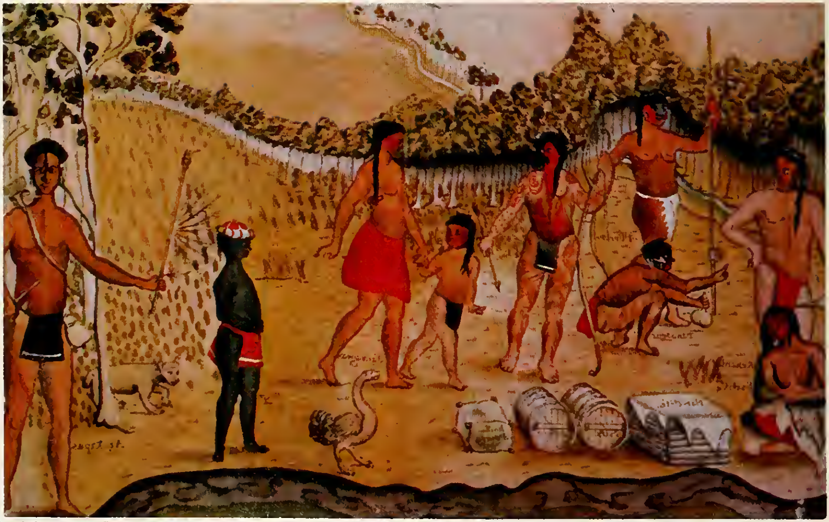
21. Finish the base wrappings with either epoxy lacquer or three or four coats of rod varnish. Many custom rod makers, at this point, coat not only the wrappings but the entire blank with rod varnish.

22. And this is the reason for it all . . . whether you built a new rod from scratch or reworked an old one in need of repair. Four pages ago, you knew what to do with worn fish scalers, de-hookers, and artificial baits — now you know what to do with worn rods!

Author's note: The author wishes to thank Mr. Robert W. Neuman, Curator of Anthropology at Louisiana State University, and Dr. Jon Gibson, Chairman of the Department of Social Studies at the University of Southwestern Louisiana, for reading and commenting on this article prior to publication. He also wishes to thank Dr. J. Richard Shenkel, Associate Professor of Anthropology at the University of New Orleans, for help with preliminary research. The author, of course, is solely responsible for the article's content.

By Clany Soileau

Those First Louisianians



A Bicentennial Special Report

No one will ever know when the first people set foot in Louisiana.

It is certain, however, that men were living in our state long before Columbus left Spain, before the Middle Ages, and before there was a Roman Empire or an Egyptian Pyramid.

Louisiana Indians, the first men to see and enjoy the state's beauty and its bountiful natural resources, arrived here as long as 12,000 years ago, and maybe even earlier. They were the descendants of small bands of men who about 50,000 B.C. wandered from Asia, across the Bering Strait, and into what is now Alaska. Because of the vast amount of water which was then locked up in Ice Age glaciers, the sea level was considerably lower than it is today and what is now the Bering Strait was then a land bridge between the present day Soviet Union and Alaska.

Those early arctic adventurers, the real discoverers of America, moved steadily down the coast and throughout the interior of the rich new world. By 10,000 B.C. man had reached the southern tip of South America.

The first Indians to come into Louisiana were small hunting bands, consisting only of several families. They would stay in one area until they had used up the available food supply and then they'd pick up and move on. Because of this, they had few possessions, only the simplest shelters, and their numbers were small.

Early man was tied to nature in a way we in the modern world cannot understand. Like a wanderer lost in the wilderness, his life depended strictly on what he could make, find, or kill. The problem was simple, if he was successful, he and those who were dependent on him would live; if he wasn't, they'd die.

Even under the best conditions, early men in Louisiana must have had a very short life expectancy compared to modern man.

When these first small bands ventured into Louisiana they had only spears, which were either thrust or thrown, to hunt with. Later, the Indians combined the spear with the atlatl, or spear thrower, for more effective hunting. The atlatl is simply a stick with a notch at one end on which the butt end of the spear is hooked so that when the atlatl, which is held at the other end by the throwing hand, is slung forward the spear can be sent farther and harder than it could be if thrown only with the unaided arm.

The Early Indians also used bolas made of rocks with holes or grooves bored in them and tied together with strips of rawhide or vine. Bolas were used mainly to hunt waterfowl, a method long used by eskimos.

The bow and arrow came into wide use sometime between 950 and 1,300 A.D.

The European explorers wrote about the hunting and fishing techniques of the Indians they met, and it is logical to assume that many of the successful techniques used by historic Indians would have been in use by prehistoric Indians for thousands of years.

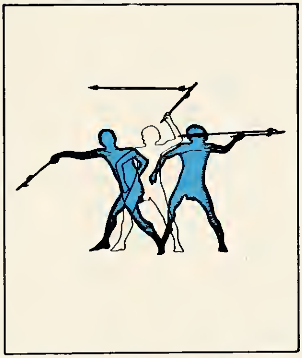
Dumont de Montigny in his *Memoires historiques sur la Louisiane* published in Paris in 1753 and Le Page Du Pratz in his *Histoire de la Louisiane* published in Paris in 1758 recount how the Natchez, one of the most advanced and powerful tribes in Louisiana, hunted bears.

Both writers state that the most important part of the hunt was the thorough knowledge which the Indians had of the woods and the animal's habits. The Indians searched until they found hollow trees with claw marks on them indicating there might be a bear either hiding or hibernating inside.

Once the Indians had determined there was a bear inside the tree, they would throw bundles of burning cane or wood into the hollow trunk. The bear would be smoked out of the tree and have to back down the trunk where it was an easy prey to the Indians' arrows, spears, and clubs.

The two writers also tell how deer were hunted by careful stalking, which included the Indians using a deer's skin or head to confuse the animals, until the hunter could get close enough for a shot. Sometimes just wounding a deer would be enough to insure success since an Indian might follow the animal for days before it fell from its wounds.

Du Pratz describes a deer hunt in which as many as several hundred of the young men went out hunting in a wide crescent. As soon as a deer was spotted inside the crescent the Indians nearest the deer began the chase while those on either flank began closing up into a circle. The deer was frightened and ran back and forth from one line of hunters to another until it finally collapsed from exhaustion and was killed.



The atlatl, or spear thrower, in action. Opposite, a New Orleans scene drawn in 1735 by A. DeBatz.

The Natchez also used dogs to hunt turkeys. The dogs forced the birds to fly up into trees where the Indians shot them.

Fire was one of man's most useful hunting tools. If the wind were blowing toward a body of water, the Indians would set a fire across a narrow neck of land so that the animals were trapped between fire and water.

The trapped animals which were not killed by the fire or by the hunters who trailed the blaze would flee into the water where they'd be killed by other tribesmen who were waiting for them in dugouts.

Indians also used fire for night fishing, much as today's fishermen do. A fire would be kept burning in a canoe and the Indians would slowly float on the stream looking for the fish which would be lured to the surface. The Indians would then spear them.

Louisiana's many bodies of water provided a ready source of food for the Indians. They fished with nets, traps, or drags made of branches, vines, or any other material that was suitable, collected clams, and trapped turtles and alligators.

One common way of fishing by entire communities was to block off a body of water with a net or fence so that the fish were trapped. The women and children might even begin herding the fish toward the net from miles away.

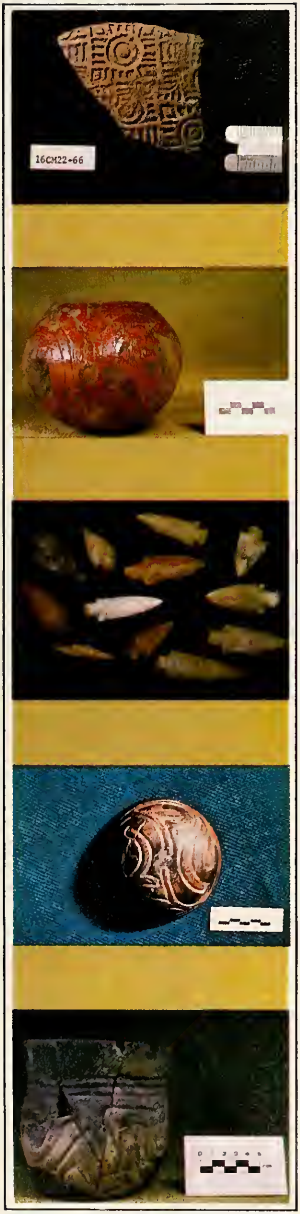
Once the fish were concentrated, they could be poisoned, speared, shot with arrows, or taken by hand or with a scoop net. If a drag was used, the fish were simply pulled up onto the bank.

The Indians used several natural poisons, including crushed buckeyes, green black walnut hulls, horse chestnuts, and a plant called devil's shoestring, to poison the fish.

The Indians also used a variety of hooks made of bone or wood to take fish. These hooks were even made up into trotlines and strung across streams.

Ducks were plentiful in Louisiana and one of the techniques the Indians used to hunt them was quite ingenious.

One group equipped with large nets would go downstream and put themselves in the path they knew the ducks took when flying. Another group would go in the opposite direction, circle around



Indian craftsmen left us a legacy of stone and clay: from top, a pottery sherd from Cameron Parish, the design pressed into the wet clay with a wooden paddle before baking; a ceramic vessel from West Feliciana Parish; arrowheads from St. Tammany Parish; and two ceramic vessels from LaSalle Parish.

and come up on the ducks from behind and spook them so that they took flight toward the Indians waiting downstream. Other men waiting along the sides of the waterway would throw sticks over the flying ducks and imitate the cry of a hawk. The ducks would dip low to avoid danger and fly right into the nets.

Small game, including raccoons, rabbits, muskrats, squirrels, and numerous different birds, were hunted with snares, traps, nets, blowguns, and even throwing sticks.

Were the early Indians truly successful hunters with their spears and atlatls?

In an article published in *Florida Wildlife* in 1956 Dr. Hale G. Smith points out that when the Indian first arrived in Florida he found the mastodon, an early type of horse, the camel, and the giant sloth. All became extinct shortly after the Indians arrived.

Dr. Smith says "there are indications that some animals, the mastodon for example, became extinct because men hunted them out. We know that these Ice Age animals had traveled the pathway to oblivion by about 2,000 B.C. Since there is little indication of major climatic and environmental changes in Florida since this early time, the evidence seems to point to the possibility that the presence of man in the state might have been a major factor in their disappearance."

At Avery Island the bones of numerous extinct animals have been found in conjunction with the remains of early man. These animals included the sabre tooth tiger, the giant big-horned bison, the plains horse, two types of ground sloth, the mammoth and the mastodon. Although Louisiana's climate did change about the time these animals disappeared, the ferocity of the early hunters must be counted as a strong factor in the animals' extinction.

The early Indians supplemented whatever food they could get hunting and fishing by gathering all the edible plants, roots, berries, seeds or whatever they could find, and with thousands of years of trial and error behind them the Indians had a natural supermarket all around them.

In Louisiana there was a wide variety of wild plant food available including numerous grass seeds, plums, persimmons, grapes, mulberries, strawberries, walnuts, hickory nuts, pecans, chestnuts, acorns, wild onions, wild sweet potatoes, and different types of cane and water lily seeds.

As time went on, the Indians began farming and the gathering of wild food became less important. Corn, beans, and squash were introduced to Louisiana from Mexico and were the major foods cultivated by Indian farmers. The steady and reliable food source provided by cultivated crops allowed the Indians to build larger and more stable villages and freed them from the bondage which had tied them to the natural food supply for so long.

But one might well ask how do we know about these early men?

The answer is complex and always only partial. Early man left evidence of the sort of life he lived. He left pottery sherds, stone and bone tools and weapons, animal and human bones, seeds, post molds where house posts were once fixed in the ground, imprints of basketry and the like.

Usually these remains are found in what were once home or village sites. When an Indian site is found, sometimes this is just the Indians' garbage dump, archeologists set about excavating it. The material they find tells them much about the Indians' way of life and the time at which the particular group lived.

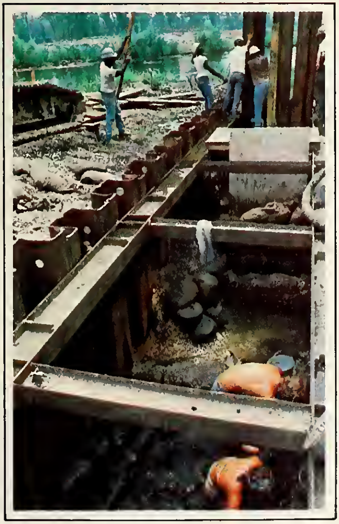
And then, of course, there are historical records of European explorers who had contact with the Indians living here during the 1700's and educated guesses based on what is known about other people who lived under conditions similar to those the Indians lived under, not only in America but around the world.

The first thing one learns from the available evidence is that to lump all of the Indians who lived in Louisiana is to suggest a homogeneity that did not exist. There was actually no one single group of Louisiana Indians, rather there were many, many different families, bands, groups, and tribes that lived throughout our state over the thousands of years before the Europeans came. They spoke many different languages, hunted and fished, gathered wild foods, farmed, traded, and fought, and were actually only one part of the rich tapestry that was the life of the American Indian.

Unfortunately, the most important and distinctive elements in human life are not as durable as the stone and bone remains. The beliefs, fears, languages, social customs, and the crafts and skills have almost all disappeared, to be reconstructed only partially and by the most painstaking work.

From the information that is available, scholars try to reconstruct what the lives of the different Indian groups must have been like. They try to derive their language, technology, religion, political and social organization, and their relationship to other groups around the state and nation.

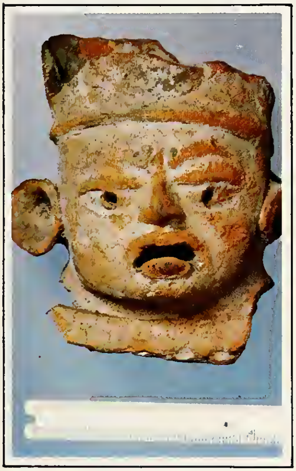
ARCHEOLOGISTS WORK A PREHISTORIC SOUTH LOUISIANA SITE



Fieldwork can involve some tricky technical problems, including the need for a metal cell and water pumps to keep an excavation from flooding. These scenes are all from an excavation at Bayou Jasmine in Saint John the Baptist Parish. Remains date from 1,500 B.C. to 1,400 A.D.

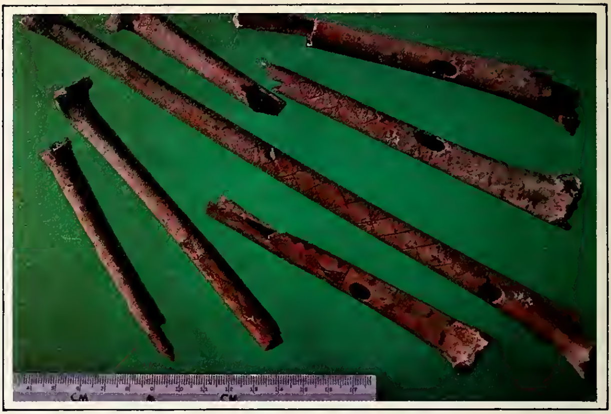
Anthropologists have grouped the different Indian peoples that lived in the state over the many thousands of years into several rough periods or cultural stages. The different groupings show a gradual movement through the years toward greater complexity, just as European culture became more complex from 10,000 B.C. to 1,700 A.D. The Indians, for example, learned new ways of providing the food they needed, their villages became larger and more permanent, and their religious, social, and political organizations became more complex.

The names of the different cultural stages, usually named for the site in which evidence of a particular culture was first found, and the dates are: the Historic (1,700 A.D. to present), Caddoan, Mississippian, Plaquemine, (1,300 A.D. to 1,700 A.D.), Coles Creek (950 A.D. to 1,300 A.D.), Troyville 600 A.D. to 950 A.D.), Issaquena (300 A.D. to 600 A.D.), Marksville (100 B.C. to 300 A.D.), Tchefuncte (600 B.C. to 100 B.C.), Poverty Point (1,500 B.C. to 600 B.C.), Archaic (6,000 B.C. to 1,500 B.C.), and Lithic (back to 10,000 B.C. or older).



This human effigy head found in Livingston Parish was part of the cover for a ceramic vessel. It is a clear example of the skill of the Indian artisans.

Before our European ancestors "discovered" Louisiana, over 500 generations of prehistoric Indians had lived and died in Louisiana. We have no written record of their existence and their stories can only be told by excavating and analyzing the state's many prehistoric sites. It's impossible to give examples of all the numerous different cultural stages in one brief article but a description of three prehistoric sites will give some idea of how the Indians' story has been reconstructed.



These incised Whooping Crane bones were found on the chest of a person buried perhaps a thousand years ago in Cameron Parish. What were they meant to be? Whistles? Religious objects? Good luck charms? No one will ever know. They're simply one more tantalizing hint of a way of life that is lost forever.

One of the most intriguing prehistoric sites ever discovered in Louisiana, or in North America, is the Poverty Point site in northeast Louisiana. Located along Bayou Macon, the site has given its name to a culture which extended between modern day Louisiana and Georgia from 1,500 B.C. to 600 B.C.

Today, all that remains of what was once a vibrant and thriving community are two immense man-made earthen mounds, two smaller mounds, and six concentric ridges. The community itself is estimated to have numbered perhaps as many as 5,000 people with 10,000 people living in the immediate area. These figures are based on the amount of labor that would have been needed to construct the mounds and the population which could have been supported by the available food supply.

The large mounds are felt to be in the shape of birds and to have symbolized a complex religious system which centered on the worship of a bird-like supernatural being which the mounds symbolized. Similar beliefs were recorded by European explorers who encountered Indians along the Mississippi many years later.

There is evidence that the community could have lived solely by gathering available natural foods and hunting and fishing. There might have been no organized farming.

Once this young woman begins washing down the soil she and her colleagues have dug up, she's never sure what she'll find, from animal bones, to stone tools, to pottery sherds.

An archeologist returns to the lab to study excavated material. Below, an archeologist in Madison parish at the site of a human burial that took place about 500 A.D.

Photography Courtesy Museum of Geoscience Louisiana State University

If there were no farming, the Poverty Point site would represent one of the most complex societies ever developed without some sort of agriculture. As it is, it is perhaps the earliest complex culture site in all of North America. It was abandoned for some reason and although there are several theories no one will ever know why.

A burial mound called the Crooks site near Catahoula Lake in La Salle Parish has been excavated and placed in the Marksville period. In addition to over 1,000 burials, excavators found numerous different pottery types, projectile points, drills, hammerstones, scrapers, stone beads, sandstone human effigies, bone fish hooks, clay pipes, remains of basketry, and copper ear spools and beads.

As at Poverty Point, artifacts found at the Crooks site give evidence of long distance trade. Conch shells were found in the mound which had come from the Gulf of Mexico; the copper may have come from the Lake Superior deposits; and galena and quartz crystals may have come from Arkansas. There was also pumice and volcanic tuff which could not have been found locally.

Excavations on Big Oak and Little Oak Islands in eastern New Orleans revealed that Big Oak Island had four distinct occupations or utilizations beginning from before 500 B.C. and lasting until almost 500 A.D.; Little Oak Island had a single occupation of the Tchefuncte type.

Both sites yielded bone and antler tools such as spear points, fishhooks, flakers, fleshers, and beads, as well as human burials. Some of the material was not available locally and could have come from as far away as Arkansas and the Appalachians.

The story of the first Louisianians is a rich and important part of the heritage which we all share. A heritage that continues today not only in the lives of the Indian descendants of those first men who came to our state but also in the lives of all Louisianians who care about preserving the land and its resources for those who will come after us. The rich resources of our state gave the Indians life, and as long as we preserve and care for those resources they will provide for us also.

"WE GET LETTERS..."

Dear Mr. Angelle:

The other night my wife and I were looking up some recipes in the *Conservationist.* I've kept most of the issues dating back to the '60s and now I'm glad I did.

As we thumbed thru the various magazines, we remembered the good times we had and how much we miss good old Louisiana. I doubt if any other state in the Union can match what Louisiana has to offer, and the *Conservationist* does an outstanding job in presenting Louisiana to the general public.

Too often we take for granted the things we have at our fingertips. We had to move to Texas to realize this.

On behalf of a couple of transplanted Cajuns, please accept our check for $10.00 as our way of showing our appreciation for what you all are doing.

Sincerly,
A.J. Reixach, Jr.
Houston, Texas

Dear Mr. Reixach:

We deeply appreciate your complimentary letter regarding the Louisiana Conservationist *and the work of the commission.*

You may be assured that your check will be used wisely to further the preservation of wildlife resources in the State of Louisiana. Anytime you are ready to return, we are always glad to welcome a Cajun back home.

Sincerely,
J. Burton Angelle
Director

Dear Eighth Grade Students of Buckeye High School:

Director J. Burton Angelle has asked me to again express appreciation from the Louisiana Wildlife & Fisheries Commission for your $200 contribution.

It is very gratifying to see young people exhibit an interest in the wildlife resources of our state, and you may be assured that your check will be used wisely in preserving these resources.

I hope you enjoyed your visit and anytime we can be of assistance to you just drop us a line.

Sincerely,
(Ms) Marian R. Pendley
Executive Assistant

Dear Director Angelle:

Thanks for the memories.

Thanks for the opportunity to have worked with so many wonderful people during the past 30 years. I would like to express my feelings by saying if I had to chose employment and live this part of my life over I would do the same. I have derived great satisfaction in this field of work, regardless of whether it was in the hot sun, cold wind, rain, rough seas or calm. I often look back and realize I enjoyed the rough times as well as the good — like getting up before dawn to watch the day break while working somewhere out in the coastal marsh or being called to duty by radio just when the fish were biting so good.

Needless to say, I made many friends on my various interesting assignments and details, with the petroleum industry as well as the fishing industry.

It was interesting traveling by car, boat, airplane, and helicopter down the entire southeast coastal area of Louisiana. I often think of the things I use to do, such as climbing to the top of an oil derrick to take photos of a pollution violation.

I an 55 years old now, but oil field pollution abatement has been the most part of my life thus far.

I would appreciate it if you would pass my message of "Thanks for the Memories" to all the employees of the Louisiana Wildlife and Fisheries Commission.

Jack Hood
Coastal Environmental Agent III
Oysters, Water Bottoms and Seafoods
Division

Executive Assistant Marian Pendley accepts a check for $200 from representatives of Buckeye High School, Kim Paulk and Dwayne Reed. The funds are to be used to further conservation in Louisiana. Faculty members of Buckeye at the presentation included Bob Stevens, Hilda Graff, Terry Smith, Sandra Smith, Douglas Martinez, and Lynn Sibley.

AGENT OF THE YEAR

Candies, right, is presented a certificate of appreciation and a plaque by Commission Director J. Burton Angelle, honoring him as "Wildlife Agent of the Year for 1975." Doyle G. Berry, chairman of the wildlife commission, watches the presentation.

Lt. Tommie Candies of Des Allemands, Louisiana, named "Agent of the Year" for 1975 by the Louisiana Wildlife and Fisheries Commission, was honored by the Shikar-Safari Club International at a recent public meeting of the commission in Morgan City.

On behalf of the Shikar-Safari Club, J. Burton Angelle, commission director, presented Lt. Candies with a framed certificate and a specially hand-molded plaque, which also may be used as a serving tray.

Angelle read Candies part of a letter from James G. Shirley, vice president and president-elect of Shikar-Safari Club, which noted that in addition to the certificate and molded plaque "in your name Shikar-Safari Club International has made a contribution to the National Foundation for Conservation and Environmental Officers, located in High Bridge, New Jersey . . . and it is to provide financial assistance to the survivors of wildlife personnel of all states who have lost their lives in performance of duty . . ."

Candies started with the commission in September, 1970, and worked his way up the ranks to lieutenant. For the past five years, he has done outstanding work in the field of law enforcement, leading his district in the number of citations issued and concentration on major violations.

LWLFC Capt. Ray Montet wrote Candies' letter of nomination. It revealed "that from last year to present, Candies is credited with 854 cases, of which 136 were major violations of hunting, taking and possessing deer at night or closed season, illegal night hunting, taking and possessing alligators in closed season, and fish shocking. He had a total of 284 angling cases, 336 boat cases, 29 migratory bird cases, and 76 miscellaneous cases."

Candies was honored not only for doing patrol work in his district, but for doing undercover work on numerous occasions and for investigation of game violations.

The young agent is a highly skilled boat operator and is assigned a small "catch boat" capable of doing 70 miles per hour. The boat, with Lt. Candies at the controls, has been highly effective in reducing violations by night hunters, alligator hunters, and fish shockers.

Of great significance, Candies has been successful in working with courts in his parish and adjacent parishes. The parish he works has come from being one where no fines were collected to one where approximately 95 per cent of the fines are collected at present.

PIE'S POTPOURRI

By Marian Pie Pendley

There is a saying that the more we change, the more we remain the same. During this Bicentennial Year this saying would certainly not hold true.

Young girls of Colonial times were taught all the basic tasks and in 1776 cooking was defined as woman's work. The men farmed and hunted and fished but definitely would not be found in the kitchen. Many changes have occurred during the 200 years since America has enjoyed its independence and the reversal of roles in the kitchen is one of them.

One of the dishes that was standard fare in early American homes was **BRUNSWICK STEW.** It was so versatile it could be made with rabbit, squirrel, raccoon or venison.Still popular today, the recipe is as follows:

3 lbs. of rabbit, squirrel, raccoon or venison
1½ tbsps. salt
½ cup chopped onions
2 tbsps. brown sugar
1 cup peeled cut-up potatoes
1 can tomatoes
1 can whole kernel corn
1 can lima beans
6 whole cloves
¼ tsp. cayenne pepper

Place meat in a large soup pot with just enough water to cover. Add salt, onions, brown sugar and potatoes. Cover and simmer for about 2 hours or until the meat is very tender. Add water if necessary. Skim off all fat. Add tomatoes, corn, lima beans, cloves, and cayenne pepper. Simmer until the stew is real hot and serve.

By contrast, today's menus consist of such dishes as souffles and crêpes . . . and members of the male sex are a common sight in the kitchen today. A popular dessert with youngsters in a recent cooking class is Strawberry Crêpes and this is the method they used.

CRÊPES

3 eggs
1½ cups flour
1 teaspoon sugar
⅛ teaspoon salt
1½ cups milk
2 tablespoons butter, melted and cooled

FILLING
Vanilla ice cream
1 pint fresh strawberries

SAUCE
1 package frozen strawberries, sweetened
6 tablespoons butter bits
2 teaspoons cornstarch

To make crêpes in the blender, mix eggs at medium speed until well blended. Add half the dry ingredients which have been sifted together and mix until there are no lumps, then add the remaining dry ingredients. If mixture is too thick, add a small amount of liquid. Add remaining liquid a little at a time until half is used, then pour in the rest and beat until smooth. Add melted butter, beat again, cover and set aside from 1 to 6 hours.

Mash strawberries to a smooth puree. Melt the butter bits in a small saucepan over moderate heat; add strawberries and bring to a boil. Add cornstarch which has been mixed with 4 tablespoons water and cook until clear. Cover pan and set aside off the heat.
After crêpes are cooked put about 2 tablespoons of the ice cream and fresh strawberry mixture in the crêpe and roll up. Working quickly so the ice cream doesn't melt, roll as many as you need, allowing two for each person. When ready to serve, place two on each dish and cover with cooked sauce. Serve immediately.

BOOKS ABOUT LOUISIANA

Anyone interested in Louisiana wildlife, should be grateful to know of three books which are currently available under the sponsorship of the Louisiana Wildlife and Fisheries Commission.

The three volumes are *Freshwater Fishes of Louisiana* by Dr. Neil H. Douglas, and *Louisiana Birds* and *The Mammals of Louisiana and its Adjacent Waters* by Dr. George H. Lowery, Jr.

Dr. Douglas' definitive work on Louisiana's freshwater fishes contains the results of nine years of collecting by Dr. Douglas, many students, and commission personnel. Fish were collected from all the state's major river drainages, identified, catalogued, and their distribution carefully plotted. All 22 families and 148 species of fish found in Louisiana waters are discussed and identified.

Every fisherman in the state has probably at some time or another seen a fish he couldn't identify. The book is ideal for the amateur ichthyologist since it contains a section of drawings showing the structures and measurements used in identifying the fish as well as a glossary of technical terms. Using this book, a fisherman should be able to identify any fish he pulls into his boat. Every known freshwater fish in Louisiana is illustrated and described. The book contains 45 color plates and 150 black and white sketches.

Another of the books the commission has sponsored, *The Mammals of Louisiana and Its Adjacent Waters*, is the result of twenty years of cooperation between Dr. Lowery and the commission. The book has a rich history in that it is the successor to *The Fur Animals of Louisiana* by Stanley Clisby Arthur which the commission issued in 1928, a book which has long been out of print.

Dr. Lowery was originally approached by Ted O'Neil, chief of the commission's Fur Division, about revising Arthur's book. Instead of a revision, Lowery wrote a completely new book that covers not only fur-producing animals but every mammal known to occur in the state, including oppossums, shrews, armadilloes, manatees, whales and dolphins.

The book is filled with color and black and white illustrations. It will be valuable not only to anyone with an interest in the outdoors but also, because of the technical information it contains, to students of mammalogy and wildlife management.

The completely revised third edition of *Louisiana Birds* describes the 411 species of birds that have been discovered in the state and includes 43 species that have been noted since the book was first published in 1955.

Dr. Lowery has pointed out that birds, unlike most other forms of wildlife, are easily observed and studied in their natural habitat. With this book, a great deal of patience, and a love of birds, an amateur ornithologist should be able to identify any bird he'd see in the state.

The men who authored these important books are two of Louisiana's outstanding biologists. Dr. Douglas is Professor of Biology and Curator of the Museum of Zoology at Northeast Louisiana University. Dr. Lowery is Boyd Professor of Zoology and Director of the Museum of Natural Science at Lousiana State University.

Freshwater Fishes of Louisiana is available from Claitor's Publishing Division, 3165 S. Acadian at I-10, P.O. Box 239, Baton Rouge, Louisiana 70821.

Louisiana Birds and *The Mammals of Louisiana and Its Adjacent Waters* are available from the Louisiana State University Press, Baton Rouge, Louisiana 70803.

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